EDITORIAL ARTICLES.

THE SURGERY OF THE HYPERTROPHIED PROSTATE.

The surgery of the prostate is of chief interest in its relation to the treatment of obstructive hypertrophy, the great frequency of which would make it an important surgical condition even if its consequences were less distressing. When we remember what those consequences are and how many lives are rendered wretched by them at a time when repose and quiet are most essential and have perhaps been well-earned, we can understand the constantly increasing attention which is being paid to the subject.

At the present time the results of operative interference (prostatotomy and prostatectomy), seem to me to warrant the following statements which although here made dogmatically can be supported by statistics.

Prostatectomy, in spite of the unfavorable opinion of the operation formed and expressed by Socin, Guyon and Sir Henry Thompson, has steadily gained in the estimation of the profession and is today a well-recognized and justifiable surgical procedure applicable to a large number of cases.

In the selection of those cases the most important factors are: *a*, the existence of a fair amount of vesical contractility; *b*, the presence of a large quantity of residual urine; *c*, the coexistence of cystitis, especially in cases in which catheterization is difficult or painful; *d*, the absence of toxemia.

As a corollary to these propositions it follows that in patients with general sclerosis, with rigid vessels, polyuria, and hyaline casts, in whom the urine dribbles away even through the catheter and can only be completely evacuated with the help of hypogastric pressure; and in those in whom the quantity of residual urine is small, showing either a moderate degree of obstruction or a high grade of compensa-

tory hypertrophy of the bladder, and in whom the urine remains sterile and catheterization is easy and painless, prostatectomy is not as a rule to be thought of.

The former group if they demand interference on account of bladder infection require perineal prostatotomy and drainage, an easy, rapid almost bloodless operation with the minimum degree of shock. The latter group simply require to be instructed in the use of the catheter, and especially and primarily in the preservation of instrumental and vesical asepsis. It is unquestionable, however, that habitual catheterism even in those cases in which it is easy may be in itself a cause of vesical atony, and it is certainly a strong argument in favor of early operation that the chief palliative measure that replaces it may within a few years—*will* according to Sir Henry Thompson—so ruin the muscular power of the bladder that it can never recover. (Moullin.)

The indications for operation may be considered in more detail.

1. The amount of muscular power remaining in the bladder walls may be roughly estimated by the size and force of the stream of urine which the patient can project *a*, unaided, and *b*, through a catheter. A manometer has been tried with the idea of measuring more accurately the force of the bladder walls but has proved useless. (Moullin.) If doubt exists as to whether feebleness of propulsive power is due to obstructive or degenerative causes, the common association of the latter with the evidences of general sclerosis should be remembered and given due weight. Usually, however, catheterism will clear up this doubt by removing the obstructive element and thus demonstrating the degree of vesical atony or rigidity which is present.

2. The quantity of residual urine is important as showing both the amount of obstruction and the capacity of the bladder. If it is large in spite of the presence of good muscular power it should be regarded as distinctly indicating prostatectomy.

3. The condition of the urine and of the vesical mucous membrane is important. Sterile urine *i. e.* absence of infection of the mucosa with pyogenic or saprophytic organisms is a most favorable factor as regards prognosis; but recurring cystitis, especially when it is unassociated with vesical paresis either atonic or

sclerotic, is an indication for prostatectomy although it undoubtedly increases the danger of death from sepsis. If, with the cystitis there is difficult or painful catheterism, the surgeon finds himself practically forced to operation in spite of these unfavorable circumstances.

4. If the general health is unimpaired and there is no evidence of renal disease, while the local symptoms are pronounced the case is obviously one of the most favorable for prompt operative interference. Unfortunately the great majority of prostatics are not led to consider operation until long after the break-down in catheter-life has been followed by vesical and renal infection and the supervention of the general toxemia, a combination of sapremia, septicemia and chronic uremia, which renders them such unfavorable subjects for the surgeon. The mortality in all forms of prostatectomy has varied from 13.6 (perineal) to 25 per cent. (supra-pubic); perineal prostatotomy has a mortality of but 4.5 per cent. In considering these figures it must be remembered that many of the cases presented all the unfavorable symptoms which have been mentioned and that few cases have as yet submitted to operation at an early date. The wretchedness of the life which awaits such patients certainly renders considerable operative risk justifiable. In a collection of 33 supra pubic prostatectomies in which there were 7 deaths, all the patients but four where over 60; eight were over 70; almost all were in wretched health, many as stated by one operator were "obviously within a few days or weeks of death unless speedily relieved;" another says: "the cases were not selected, except that all mild cases were refused operation and no desperate case was denied the chance, and of these several were nearly dead when taken in hand."

Moullin's table shows 19 deaths in 95 cases of supra-pubic prostatectomy, a mortality of about 20 per cent.; but the last half of the table (which is arranged chronologically) shows only 15 per cent. This is in accord with the history of nearly every important operation now performed by surgeons. With increased experience comes better judgment in the selection of cases and greater facility in operative technique.

It is evident that we have not yet the data for estimating the true mortality of the operation in those cases in which the more serious contra-indications are absent.

As to the choice of operative procedure there is no good reason for dissenting from the general conclusions formulated by McGill (1889) and Belfield (1890). Of the three avenues of approach to the prostate, the urethral, the perineal and the supra-pubic, the former is surgically altogether unsatisfactory and those operations which profess to divide through this channel a "bar" at the neck of the bladder either by a knife (Mercier) or the electro-cautery (Bottini) are based on faulty pathological premises, as that form of obstruction exists in only a small percentage of cases. The dangers of a blind internal incision need not be emphasized.

The perineal route has been shown (Watson) to permit access to the operative field even in the cadaver in not more than two-thirds of adult males, and in only three of the twelve cases operated on by McGill could the projecting portions of the prostate have been removed by the perineal route. Prostatectomy can therefore but rarely be performed in a thorough or satisfactory manner by this method. In the class of cases already described, with loss of expulsive power, cystitis, general degenerative changes, and marked feebleness, perineal prostatotomy or puncture (Harrison) with permanent drainage is the operation of choice, and gives at the same time a chance in the minority of cases for the removal of the projecting middle lobe by the finger or forceps or wire snare. Moullin's tables show twenty-four cases of prostatotomy with one death and fourteen cases of perineal prostatectotomy with two deaths. While I agree with him that the latter operation confers upon the patient a degree of relief with which that following mere cystotomy or drainage offers no comparison, I cannot endorse his statement that the risk is not appreciably greater. The above figures contradict it and even in suitable cases the removal of the projecting lobe must add somewhat to the mortality. It should, nevertheless, be attempted whenever it seems possible as even if it does not result in the recovery of complete control over the bladder, it may render catheterism easy and painless, a condition which is undoubtedly far preferable to the permanent employment of a drainage tube, either perineal or supra-pubic.

Dittel's operation of lateral prostatectomy has been used by Kuster in three cases with a moderate degree of success. It seems

applicable only to those patient in whom the obstruction depends upon enlargement of the lateral lobes and in whom at the same time the small size of the bladder and the rigidity of its walls prevent the supra-pubic operation.

Supra-pubic prostatectomy should be selected for the remainder of those cases in which catheter-life has become impossible, and the time has arrived when early operation by this method should be not only suggested but urged by the surgeon. It is certain that the possibility of serious disease of the urinary tract above the bladder increases in every case in a direct ratio with the duration of obstructive disease anterior to that organ. Indeed we know that even frequency of micturition is of itself a competent cause of ureteral dilatation, hydro-nephrosis, etc., and when to these factors are added the grave vesical changes which follow infection and retention it seems strange that renal disease is ever absent in such patients.

As to the technique of the procedure the adoption of Trendelenberg's position; the omission of the rectal bag; the arrest of hemorrhage by an internal pad held in place by a string carried through a perineal incision (Keyes); and the use of an ecraseur introduced through the urethra, the mucous membrane over the growth being incised and the wire being guided to its proper place through the usual suprapubic incision, are the modifications most worthy of mention. The latter suggestion seems to me worthy of note as enabling us in desperate cases to reduce the hemorrhage to a minimum and to remove only that portion of the prostate, which is really obstructive. I called attention some time ago (*Medical News*, Dec. 13, 1890), to the fact that the risk of hemorrhage, of shock from prolongation of the operation, of sepsis from the exposure of a larger absorbent surface are all directly increased with the amount of the prostatic overgrowth which is removed, making it most important that we should know how *little* we may do with a reasonable prospect of resulting benefit. In two of the three deaths set down by McGill, as directly due to the operation large portions of the prostate had been taken away and I have had the same experience. That age with its associated debility is not the chief factor in causing death is shown by the fact that of 90 cases in which the age is given (Moullin)

the average was 64½ years, while of 18 fatal cases the average was only 66½ years. The difference is not great enough to warrant the assumption that age is of primary importance in determining the mortality. It must not be forgotten that the object of the operation is to restore a "low-level channel" through the prostate and is not simply the excision of the overgrowth (Belfield). Moullin attempts a distinction between those cases in which the immediate indication for operation is intense irritation, and those in which it is obstruction, but wisely adds that it is rare that operation is required for one of these causes alone, both being present usually even if one appears paramount.

He says further and, it seems to me, with less wisdom, that practically, if the operation is to prove successful it resolves itself into removing the whole of the vesical mass, whether it springs from the lateral lobes, or is an upgrowth from the posterior wall, or is a detached nodule. This may be true, but it has certainly not yet been demonstrated. Every surgeon who has done a number of tonsillotomies is familiar with the remarkable diminution in size of that gland which may follow the removal of a comparatively trifling portion. It may be found that similar contraction of the prostate will result from the removal of merely the most salient portion. If so, it would undoubtedly lessen the mortality and greatly promote the general acceptance of the operation. The lessening in the size of the prostate which, in a number of instances, has followed Harrison's operation of puncture of the post-prostatic pouch with a trocar and cannula seems to have some bearing upon the question. In some of his cases after withdrawal of the tube normal micturition was re-established.

In a number of cases (Schmidt, Guyon, McGill, Belfield), various forms of obstruction due to *suburethral* prostatic growth have been found and have either rendered the supra-pubic operation a failure or have required special operative measures for their relief. There seems no reason to question the propriety in every case of supra-pubic prostatectomy of examining the prostatic urethra with the finger and of performing perineal urethrotomy if a hard mass or a rigid ring is discovered (Belfield). This admits of thorough stretching, of incision or of excision and adds but little, if at all, to the dangers of the case.

J. WILLIAM WHITE.